INDEX TO VOLUME VIII.*

A

Abney, W. de W., color sensations in terms of luminosity, 464.
Academy of Sciences, National, meeting at New York, 474.
Aerolite, see *Meteorite*.
Agassiz, A., coral reefs of Fiji, 80.
Arkansas, Devonian interval in northern, Williams, 139.
Association, American, meeting at Columbus, Ohio, 86, 238, 311.
British, meeting at Dover, 238.
Astronomical Observatory, Harvard College, Annals, 87.
Astronomy, Elements of, Campbell, 88.
Atoms, existence of masses smaller than, Thomson, 463.
Austin, M., double ammonium phosphates of beryllium, zinc, and cadmium, 206.

B

Baldwin, DeF., action of acetylene on the oxides of copper, 354.
Becquerel rays, Elster and Geitel, 463.
Bigelow, F. H., international cloud work for the U. S., 433.
Biological variation, Davenport, 399.
Birds, Hand-list, Sharpe, 398.
Water, of Eastern N. Amer., Cory, 398.
BOTANY—
Cyperaceæ, studies, No. xi, Holm, 105.
Flowers, colors of, Hervey, 471.
Forestry, Primer of, Pinchot, 399.
Hepaticæ and Anthocerates of California, Howe, 309.
Hypogæous fungi, Californian, Harkness, 310.
Nitrogen, appropriation of, by plants, Lutz, 85.
Plant diseases, caused by Cryptogamic Parasites, Marsee, 471.
Variation under grafting, Daniel, 84.
Browning, P. E., volumetric estimation of cerium, 451; estimation of thallium as the chromate, 460.

C

Campbell, W. W., Elements of Practical Astronomy, 88.
Canada Geological survey, 1898, 232.
Cape Cod, Geology, Shaler, 76.
Carpenter, G. H., Insects, their structure and life, 473.
Cathode rays, dispersion by magnetic force, Birkeland, 463.
Chemie, Allegemeine, Ostwald, 74.
CHEMISTRY—
Acetylene, action of, on the oxides of copper, Gooch and Baldwin, 354.
Alumina, separation from molten magmas, Pratt, 227.
Argon and its combinations, Berthelot, 383.
Beryllium, zinc and cadmium, double ammonium phosphates, Austin, 206.
Boric acid, estimation of, Jones, 127.
Cerium, volumetric estimation of, Browning, 451.
Charcoal in purification of spirit, Glasenapp, 161.
Gold, iodometric determination, Gooch and Morley, 261.
Hæmochromogen, Von Zeynek, 162.
Hydrazoic acid, Curtius and Rissom, 382.
Hydrogen, liquid, Dewar, 160.
solidification, Dewar, 382.
Iron, estimation in the ferric state, Norton, 25.
separation of, Havens and Way, 217.
silicide, preparation, Lebeau, 72.
Lithium-ammonium, etc., Moissan, 384.

* This Index contains the general heads, BOTANY, CHEMISTRY (incl. chem. physics), GEOLOGY, MINERALS, OBITUARY, ROCKS, ZOOLOGY, and under each the titles of Articles referring thereto re mentioned.

INDEX TO VOLUME VIII.*

A

Abney, W. de W., color sensations in terms of luminosity, 464.
Academy of Sciences, National, meeting at New York, 474.
Aerolite, see *Meteorite*.
Agassiz, A., coral reefs of Fiji, 80.
Arkansas, Devonian interval in northern, Williams, 139.
Association, American, meeting at Columbus, Ohio, 86, 238, 311.
British, meeting at Dover, 238.
Astronomical Observatory, Harvard College, Annals, 87.
Astronomy, Elements of, Campbell, 88.
Atoms, existence of masses smaller than, Thomson, 463.
Austin, M., double ammonium phosphates of beryllium, zinc, and cadmium, 206.

B

Baldwin, DeF., action of acetylene on the oxides of copper, 354.
Becquerel rays, Elster and Geitel, 463.
Bigelow, F. H., international cloud work for the U. S., 433.
Biological variation, Davenport, 399.
Birds, Hand-list, Sharpe, 398.
Water, of Eastern N. Amer., Cory, 398.
BOTANY—
Cyperaceæ, studies, No. xi, Holm, 105.
Flowers, colors of, Hervey, 471.
Forestry, Primer of, Pinchot, 399.
Hepaticæ and Anthocerates of California, Howe, 309.
Hypogæous fungi, Californian, Harkness, 310.
Nitrogen, appropriation of, by plants, Lutz, 85.
Plant diseases, caused by Cryptogamic Parasites, Marsee, 471.
Variation under grafting, Daniel, 84.
Browning, P. E., volumetric estimation of cerium, 451; estimation of thallium as the chromate, 460.

C

Campbell, W. W., Elements of Practical Astronomy, 88.
Canada Geological survey, 1898, 232.
Cape Cod, Geology, Shaler, 76.
Carpenter, G. H., Insects, their structure and life, 473.
Cathode rays, dispersion by magnetic force, Birkeland, 463.
Chemie, Allegemeine, Ostwald, 74.
CHEMISTRY—
Acetylene, action of, on the oxides of copper, Gooch and Baldwin, 354.
Alumina, separation from molten magmas, Pratt, 227.
Argon and its combinations, Berthelot, 383.
Beryllium, zinc and cadmium, double ammonium phosphates, Austin, 206.
Boric acid, estimation of, Jones, 127.
Cerium, volumetric estimation of, Browning, 451.
Charcoal in purification of spirit, Glasenapp, 161.
Gold, iodometric determination, Gooch and Morley, 261.
Hæmochromogen, Von Zeynek, 162.
Hydrazoic acid, Curtius and Rissom, 382.
Hydrogen, liquid, Dewar, 160.
solidification, Dewar, 382.
Iron, estimation in the ferric state, Norton, 25.
separation of, Havens and Way, 217.
silicide, preparation, Lebeau, 72.
Lithium-ammonium, etc., Moissan, 384.

* This Index contains the general heads, BOTANY, CHEMISTRY (incl. chem. physics), GEOLOGY, MINERALS, OBITUARY, ROCKS, ZOOLOGY, and under each the titles of Articles referring thereto re mentioned.

CHEMISTRY—
Mercury in the colloidal condition, 384.
Oceanic salt deposits, formation of, Van't Hoff and Meyerhoffer, 73.
Ozomolybdates, Muthmann and Nagel, 160.
Peroxides, Melikoff and Pissarjewsky, 72.
Polonium and radium, new radioactive elements, Curie, 159, 463.
Potassammonium, action of, on sulphur, etc., Hugot, 385.
Proteids, constitution of the simplest, Kossel, 161.
Tellurous acid in presence of haloid salts, Gooch and Peters, 122.
Thallium, estimation of, Browning and Hutchins, 460.
Chemistry, Spirit of Organic, Lachman, 73.
Progress of Scientific, Tilden, 385.
Clarke, F. W., constitution of tourmaline, 111; experiments with pectolite, etc., 245.
Cloud work for the U. S., international, Bigelow, 433.
Coherer, quantitative investigation, A. Trowbridge, 199.
Color sensations in terms of luminosity, Abney, 464.
vision, Rood, 258.
Coolgardie gold field, geology, Blatchford, 396.
Crystals, Characters of, Moses, 84.
detection of dextro- and lævorotating, Kreider, 133.

D

Daly, R. A., studies in amphiboles and pyroxenes, 82.
Dana, E. S., First Appendix to System of Mineralogy, 236.
Davison, C., Hereford earthquake of December 17, 1896, 235.
Day, A. L., gas thermometer at high temperatures, 165; thermo-electricity in certain metals, 303.
DeForest, L., reflection of Hertzian waves, 58.
Dewar, liquid hydrogen, 160; solid hydrogen, 382.

E

Earth, age of, Geikie, 387; Joly, 390.
Edwards, A. M., bacillaria of the Occidental Sea, 445.
Electric waves, detection of, Neugschwender, 75.
reflection of, DeForest, 58.
in air, velocity, Maclean, 1.
Electrical discharges, explosive effect, Trowbridge, McKay and Howe, 239.
measurements, Rowland and Penniman, 35.
Electricity in Town and Country Houses, Scrutton, 88.
Emerson, B. K., geology of old Hampshire Co., Mass., 393.
Ether movements, Mil, 75.
Europe, Races of, Ripley, 465.
European Fauna, Scharff, 395.
Ewell, A. W., rotatory polarization of light produced by torsion, 89.

F

Fassig, O. L., March weather in the United States, 319.
Fiji, islands and coral reefs, Agassiz, 80.
Finland, peat bogs of, Andersson, 467; geological commission, 467.
Foote, W. M., new meteoric iron, Alabama, 153; new meteoric iron, Texas, 415.
Fulgurite, spiral, Wisconsin, Hobbs, 17.

G

Gas thermometer at high temperatures, Day and Holborn, 165.
Geikie, Sir A., geological time, 387.
GEOLOGICAL REPORTS AND SURVEYS—
Canada, 1898, 232.
Georgia, Bulletin 6-A, 469.
Iowa, vol. ix, 466.
Michigan, vol. vi, 466.
New Jersey, 1898, 394.
United States, 18th annual report, 75; 19th annual report, 76, 87, 392, 465.
Geology, Experimental, Meunier, 468.
GEOLOGY—
Auriferous deposits of Quebec, Chalmers, 394.
Bacillaria of the Occidental Sea, Edwards, 445.
Clays of Pennsylvania, Hopkins, 237.
Coral reefs and islands of Fiji, Agassiz, 80.
Cycadian monœcism, Wieland, 164.
Cycadofilices, Wieland, 309.
Devonian interval in northern Arkansas, Williams, 139.
Earth, age of, Geikie, 387; Joly, 390.

GEOLOGY—
Extinct Floras of North America, Newberry, 394.
Geology of the Aspen Mining District, Colorado, Spurr, 465.
of Cape Cod district, Shaler, 76.
of old Hampshire Co., Mass., Emerson, 393.
Grand River, Michigan, mouth of, Mudge, 31.
Lichenaria typa, W. and S., Sardeson, 101.
Magellanian beds of Chili, fauna, Ortmann, 427.
Mammals, catalogue of, Trouessart, 397.
Palæozoic terrane beneath the Cambrian, Matthew, 79.
Peat bogs of Finland, Andersson, 467.
Pre-Cambrian fossiliferous formations, Walcott, 78.
Trap of Rocky Hill, N. J., Phillips, 267.
Triassic formation of Connecticut, Davis, 76.
Vertebral centra, terminology, Wieland, 163.
Georgia, clays of, Ladd, 469.
Glaciers of Mt. Rainier, Russell, 76.
variation in length in the Arctic, Rabot, 88.
Gold and platinum layers, optical relations of, Breithaupt, 74.
Gooch, F. A., tellurous acid in presence of haloid salts, 122; iodometric determination of gold, 261; action of acetylene on the oxides of copper, 354.
Gregory, H. E., andesites from Maine, 359.

H

Harper's Scientific Memoirs, 400.
Havens, F. S., separation of iron, 217.
Heat, insulators for, Hempel, 74.
Hereford earthquake of December 17, 1896, Davison, 235.
Herrmann, Steinbruchindustrie, 81.
Hervey, Colors of Flowers, 471.
Hidden, W. E., ruby in North Carolina, 370.
Hillebrand, W. F., mineralogical notes, 295.
Hobbs, W. H., spiral fulgurite from Wisconsin, 17.
Holborn, L., gas thermometer at high temperatures, 165; thermoelectricity in certain metals, 303.
Holm, T. studies in the Cyperaceæ, No. xi, 105.
Howe, J. C., explosive effect of electrical discharges, 239.
Howe, M. A., Hepaticæ and Anthocerates of California, 309.
Hutchins, G. P., estimation of thallium, 460.

I

Iowa Geological Survey, vol. ix, 466.
Italian volcanic rocks, analyses, Washington, 286.
Iwasaki, C., orthoclase crystals from Japan, 157.

J

Joly, J., geological age of the earth, 390.
Jones, L. C., estimation of boric acid, 127.
Judd, J. W., ruby in North Carolina, 370.

K

Kansas, mineral resources, 1899, Haworth, 396; gypsum deposits of, 466.
Kingsley, J. S., Text-book of Vertebrate Zoology, 472.
Kreider, D. A., detection of dextro- and lævo-rotating crystals, 133.

L

Lachman, A., Spirit of Organic Chemistry, 73.
Ladd, clays of Georgia, 469.
Light, rotatory polarization of, Ewell, 89.

M

Maclean, G. V., velocity of electric waves in air, 1.
Magnetizing constants of inorganic substances, Meyer, 464.
Marsee, G., Plant diseases caused by Cryptogamic parasites, 471.
Matthew, G. F., Palæozoic terrane beneath the Cambrian, 79.
Mauna Loa, eruption, 237.
McKay, T. C., explosive effect of electrical discharges, 239.

Meteorite, iron, Alabama, Foote, 153. North Carolina, Ward, 225. Texas, Foote, 415.
Meteorite, stone, at Allegan, Michigan, Ward, 412.
Meteors of November 1899, 473.
Meunier, Experimental Geology, 468.
Michigan Geological Survey, vol. vi, 466.
Michigan, mouth of Grand River, Mudge, 21.
Microscopical Society, American, 399.
Mineralogy, First Appendix to Dana's System, 236.
Minerals—
Amphiboles, etching figures, Daly, 82; Analcite, Nova Scotia, 251; Arzrunite, Chili, 468; Asphalt, Indian territory, 219.
Calamine, New Jersey, 248. Carnotite, Colorado, 83. Coloradoite(?) California, 297.
Epidote, Idaho, 299.
Federovite, Italy, 83.
Ganomalite, Sweden, 348. Garnet, Idaho, 299. Glaucochroite, New Jersey, 343. Gypsum, Kansas, 466.
Hancockite, New Jersey, 339. Hardystonite, New Jersey, 82. Hessite, Mexico, 298.
Leucophœnicite, 351. Loranskite, Finland, 469.
Melonite (?), California, 295.
Nasonite, New Jersey, 346.
Orthoclase, Japan, 157.
Paralaurionite, 469. Parisite, Montana, 21. Pectolite, New Jersey, 245. Petzite, California, 297. Philipstadite, Sweden, 82, 83. Pyrophyllite, North Carolina, 247. Pyroxenes, etching figures, 82.
Rafaëlite, Chili, 468. Ruby, North Carolina, 370.
Stelznerite, Chili, 468. Stokesite, 469.
Tourmaline, constitution, F. W. Clarke, 111.
Von Diestite, Colorado, 469.
Minerals of Mexico, Aguilera, 236.
formation in a magma, Morozewicz, 80.
Morley, F. H., iodometric determination of gold, 261.
Morozewicz, experiments on the formation of minerals, 80.
Moses, A. J., characters of crystals, 84.
Mudge, E. H., mouth of Grand River, Michigan, 31.

N

Newberry, J. S., Extinct Floras of North America, 394.
New Jersey Geol. Survey, 1898, 394.
Nepheline syenite, Ransome, 417.
Trap of Rocky Hill, Phillips, 267.
North America, Later Extinct Floras of, Newberry, 394.
Norton, J. T., Jr., estimation of iron in the ferric state, 25.

O

Obituary—
Brinton, Daniel Garrison, 318.
Bunsen, Robert Wilhelm, 318.
Dawson, Sir J. W., 475.
Flower, Sir William Henry, 238.
Frankland, Sir Edward, 318.
Orton, Edward, 400.
Ortmann, A. E., fauna of the Magellanian beds of Chili, 427.
Ostwald, W., Allgemeine Chemie, 74.
Ostwald's Klassiker, 475.

P

Palache, C., epidote and garnet from Idaho, 299.
Penfield, S. L., composition of parisite, 21; new minerals from Franklin, N. J., 339.
Penniman, T. D., electrical measurements, 35.
Peters, C. A., tellurous acid in presence of haloid salts, 122.
Petrology, International Journal of, proposed, 470.
Phillips, A. H., structure and composition of the trap of Rocky Hill, N. J., 267.
Photometer, flicker, Rood, 194, 258.
Pinchot, G., Primer of Forestry, 399.
Physical Experiments, history of, Traumüller, 162.
Physical Society, American, 398; address before, Rowland, 401.
of Germany, Transactions, 75.
Physikalische Zeitschrift, 386.
Polarization of light, rotatory, Ewell, 89.
Pratt, J. H., separation of alumina from molten magmas, 227; crystallography of the rubies of N. Carolina, 379.

Q

Quebec, geology and auriferous deposits, Chalmers, 394.

R

Races of Europe, W. Z. Ripley, 474.
Radio-active substances, Häen, 386; Debierne, 463; Giesel, 463.
Ransome, F. L., nepheline syenite in New Jersey, 417.
Ripley, W. Z., Races of Europe, 474.
Rocks—
Andesites from Maine, Gregory, 359.
Gabbro du Pallet, Lacroix, 81.
Kyshtymite and corundum-syenite, of the Urals, 81.
Nepheline syenite, New Jersey, Ransome, 417.
Trachytes, Italian, Washington, 286.
Rood, O. N., flicker photometer, 194, 258.
Rotatory polarization produced by torsion, Ewell, 89.
Rowland, H. A., electrical measurements, 35; address before the American Physical Society, 401.

S

Sardeson, F. W., Lichenaria typa, W. and S., 101.
Scientia, 86.
Spurr, J. E., geology of Aspen mining district, 465.
Stars, catalogue of, Porter, 87.
Stars and Telescopes, Todd, 87.
Steiger, G., experiments with pectolite, etc., 245.

T

Taff, J. A., an albertite-like asphalt, Indian Territory, 219.
Tarleton, F. A., Mathematical Theory of Attraction, 88.
Thermoelectricity in certain metals, Holborn and Day, 303.
Thermometer, gas, Holborn and Day, 165.
Tierreich, Das, Schulze, 397.
Tilden, W. A., Progress of Scientific Chemistry, 385.
Todd, D. P., Stars and Telescopes, 87.
Trowbridge, A., investigation of the coherer, 199.
Trowbridge, J., explosive effect of electrical discharges, 239.

U

United States Geological Survey, 18th annual report, 75; 19th annual report, 76, 87, 392.

W

Walcott, C. D., Pre-Cambrian fossiliferous formations, 78.
Ward, H. L., new iron meteorite, North Carolina, 225; new meteorite at Allegan, Michigan, 412.
Warren C. H., composition of parisite, 21; new minerals from Franklin, N. J., 339.
Washington, H. S., analyses of Italian volcanic rocks, 286.
Way, A. F., separation of iron, 217.
Weather, March, in the United States, Fassig, 319.
Wieland, G. R., terminology of vertebral centra, 163; cycadean monœcism, 164; note on Cycadofilices, 309.
Williams, H. S., Devonian interval in northern Arkansas, 139.

X

X-rays, refraction of, Haga and Wind, 385.

Z

Zoology—
Catalogus mammalium, 397.
Congress of Zoology, 1898, 398.
Embryology of Invertebrates, Korschelt and Heider, 471.
Fauna, History of European, Scharff, 395.
Insects, their structure and lip, Carpenter, 473.
Odonata of Ohio, Kellicott, 88.
Results from material from New Britain, etc., Willey, 398.
Vertebrate Zoology, Kingsley, 472.